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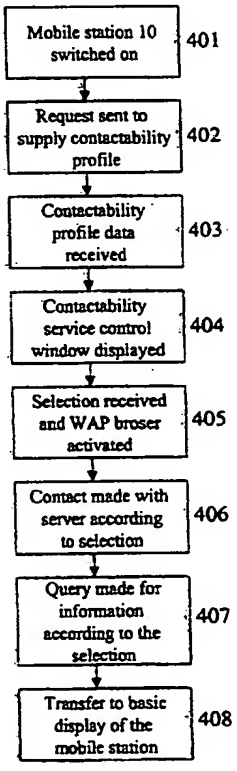

(57) Abstract: The invention relates to a method for managing a contactability profile, in which a mobile station (10) is connected (401) to a mobile station connection (11), and the mobile station (10) is connected to the telecommunications network over a signalling connection. In response to its connection to the telecommunications network over a signalling connection, the mobile station (10) receives data from the telecommunications network, which individuates at least one contactability profile (27), which is active in the telecommunications network and to which the mobile station connection (11) is connected, and, in response to the data received from the telecommunications network, a control window of the contactability service is opened (404) on the display of the mobile station (10).

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Method, User Interface, Mobile Station and Subscriber Module for the Management of Contactability Profile

The present invention relates to a method, according to the preamble of Claim 1, for using a mobile station to manage a contactability profile.

The invention also relates to an interface, according to the preamble of Claim 10, which can be operated with the aid of a mobile station arranged to operate a mobile station subscriber connection.

Further, the invention relates to a mobile station, according to the preamble of Claim 20, in which there is at least one display, and to a subscriber card, according to the preamble of Claim 21.

A contactability profile is a definition, recorded in a telecommunications network, containing the network identity of at least one calling connection and at least one receiving connection, on the basis of which the telecommunications network directs a call connection to be formed between at least one specific subscriber connection and at least one receiving connection.

One contactability profile is a contactability chain. This term refers to a series of receiving connection identities recorded in a telecommunications network, the connections corresponding to which identities are sent call connection requests, in an order according to the series, in response to a call connection request received from a subscriber connection. This continues until a response signal, which directs the telecommunications network to form a telephone connection between the calling connection and at least one of the relevant connections of the contactability chain, is received from at least one of the connections in the contactability chain, or until the entire contactability chain has been gone through without a response signal being received from any of the connections defined in it.

Contactability profiles are used in the invention disclosed in US patent publication 5,668,862, in such way that the contactability profiles are specified on the basis on functional roles. Such roles can be, for example, a business role and a leisure role. In

addition to the identity of the calling connection, the functional role, according to the subscriber identity of which a call connection request is sent from the calling connection, is forwarded to the receiving connection.

Application publication WO 99/48314 in turn discloses the configuration of an intelligent network service, such as a contactability service, by means of an interface of a mobile station. In the technique of the publication, the mobile station is equipped with an extension layer, which supports installable intelligent-network-specific configuration routines. Such an arrangement allows inputs for updating the intelligent-network service to be received from the user of a mobile station. After this, the mobile station sends the configuration information as configuration messages to the mobile network. The mobile network forwards the configuration data to the Service Control Point (SCP) of the telephone intelligent network in the manner defined for configuring the telephone intelligent network.

A drawback of the state of the art lies in the difficulty of using a telecommunications terminal device to manage the contactability profile data and information attached to the contactability profile. In the solutions according to the state of the art, the user of the mobile station must actively ensure that the contactability profile, to which the user of the mobile station is connected and which is active in the telecommunications network at that moment, is displayed to them. Using a mobile station to change which contactability profile is active in the telecommunications network requires the user of the mobile station to carry out several operations.

This invention is intended to eliminate the defects of the state of the art disclosed above and for this purpose create an entirely new type of method for managing a contactability profile with the aid of a mobile station, by means of which it is possible to facilitate the management of a contactability profile.

The invention is based on a control window of the contactability service being opened in the display of the mobile station being examined, in response to the mobile station being examined being connected by a signalling connection to the telecommunications network. This can be implemented, for example, with the aid of an operation located in the

telecommunications network. In such an embodiment, the connection of the mobile station to the telecommunications network is detected in the telecommunications network and a signal is sent from the telecommunications network to the mobile station to activate the control window. The activation of the operation according to the invention can also be implemented in the mobile station by means of functioning located either in the mobile station itself or in the subscriber card used in it, or in a similar device. The mobile station itself then detects that it is being connected to the telecommunications network and uses an active operation to request a service in the telecommunications network to send to it the information to be displayed in the control window. The operations required to manage the contactability profile can also be distributed in several different ways between the mobile station and the telecommunications network or servers connected to it.

More specifically, the method according to the invention for managing a contactability profile by means of a mobile station is characterized by what is stated in the characterizing portion of Claim 1.

More specifically, the interface according to the invention is characterized by what is stated in the characterizing portion of Claim 10.

More specifically, the mobile station according to the invention is characterized by what is stated in the characterizing portion of Claim 20, and the mobile station connection according to the invention is characterized in turn by what is stated in the characterizing portion of Claim 21.

Considerable advantages are gained with the aid of the invention. Mobile station users have the opportunity to manage calendar, message, and contactability services in a centralized and easy-to-use manner, in such a way that these services can interact mutually and control each other.

Figure 1 shows certain means, which can be used to manage a contactability profile by means of a mobile station according to the invention.

Figure 2 shows one method according to the invention for providing a contactability profile for a mobile station.

Figure 3 shows one method according to the invention for updating the data of a contactability profile in a contactability server.

The flow chart of Figure 4 shows one method according to the invention for using a mobile station to display prevailing contactability profile data.

Figure 5 shows the formation of a telecommunications connection to the customer of a contactability service, on the basis of a contactability profile.

The following describes the means shown in Figure 1 for managing a contactability profile. The mobile station 10 being examined is such a mobile station, by means of which the contactability service is managed. The mobile station connection 11 being examined is the mobile station connection to which the mobile station being examined is connected. The SSP centre 12 is any SSP-level centre, which is capable of initiating an IN trigger from the calling connection, on the basis of the received identity of the receiving subscriber. The SCP 13 is an intelligent network control, to which the SSP centre 12 is able to initiate an IN trigger. The MSC/VLR 14 is a mobile network switching centre, containing a visitor location register VLR. The SMS centre 15 is a centre transmitting SMS messages in the mobile network.

The gateway server 16 is a system, which converts the information it receives in digital form from the mobile network into a form understandable by the contactability server 18 and/or the information it receives in digital form from the contactability server 18 into a form understandable by the mobile network. The IP gateway 17 is a system, through which data traffic is transmitted between the public telephone network (PSTN) and the IP network. The contactability server 18 is a system, by means of which customer-specific contactability profiles and their related auxiliary service definitions are maintained.

The calendar server 19 is a system connected to the telecommunications network, which maintains a calendar for the customer of the contactability service. The information in this calendar can be accessed by the customer of the contactability service and updated

using the mobile station 10 being examined. The message server 20 is a system of the telecommunications network, which is set to receive and record messages sent to the customer of the contactability service through the telecommunications network and to repeat these messages in response to specific control signals.

The IP terminal device 21 is an IP terminal device, such as a PC computer, the IP address of which is connected to the contactability profile of the customer of the contactability service. The PBX 22 is the workplace PBX switchboard of the customer of the contactability service and the extension 23 is the extension of the PBX 22 leading to the customer. The mobile station connection 24 of the customer of the contactability service is the mobile station connection 11 being examined or some other mobile station connection, the identity of which is connected to the contactability profile of the customer of the contactability service. The calling subscriber connection 25 is the subscriber connection, from the direction of which a call-connection request directed to the customer of the contactability service is received. The home connection 26 of the customer of the contactability service is a PSTN subscriber connection, the identity of which is connected to the contactability profile used by the customer of the contactability service. In this case, the connection of the connection identities to the contactability profile can also refer to the connection of such an identity to the contactability profile, which is not itself the identity of the desired connection, but which identity the telecommunications network interprets, or is set to interpret, as referring to the desired connection. The contactability profile 27 being examined is a contactability profile that is active in the telecommunications network, and in which the mobile station connection 11 being examined is active.

The method shown in Figure 2 for providing a contactability profile for a mobile station includes the following stages:

201) The mobile station 10 being examined is connected 201a - 201b by a signalling connection to the mobile network.

202) A contactability profile provision request, identifying the contactability profile 27 according to the WAP protocol, is received from the mobile station 10 being examined.

203) The received contactability profile provision request is forwarded 203a - 203c to the contactability server 18, through the mobile switching centre MSC 14, the short message centre SMS 15, and the Gateway server 16.

204) Specific contactability profile data connected to the contactability profile 27 being examined is sought 204a - 204b under the control of the contactability server 18.

205) The specific contactability information connected to the contactability profile 27 being examined is forwarded to the mobile station connection 11 being examined, through the Gateway server 16, the short message centre SMS 15, and the mobile switching centre MSC 14.

The specific contactability profile data is forwarded to the mobile station connection 11, so that the mobile station 10 connected to the connection can be commanded to display the correct type of control window of the contactability server. The control window is such, that the user of the mobile station can use the information obtained from it to command the mobile station to send the control signals they desire to the contactability server 18.

In a corresponding manner, the mobile station connection 11 can be provided with data, linked to the contactability profile 27 being examined, from the message server 20 and from the calendar server 19.

Figure 3 shows a method, in which the information in the contactability profile is updated to the contactability server, the operation beginning from the situation depicted below:

Once the user of the mobile station being examined has switched on power to their mobile station and entered the correct PIN code, a control window will have appeared on the display of their mobile station. From this control window, the user will have selected the desired alternative contactability profile. After this, the following stages of the method described below and shown in Figure 3 are carried out:

301) A contactability profile database update request, according to the WAP protocol and directed to the contactability profile 27 being examined, is received from the mobile station being examined.

302) The received update request is forwarded 302a - 302c to the contactability server 18, through the mobile switching centre MSC 14, the short message centre SMS 15, and the Gateway server 16.

303) Specific contactability profile data linked to the mobile station connection 11 being examined are altered 303a - 303b in the control of the contactability server 18, according to the received update request. As a result of this, there is a change in the contactability profile 27, to which the mobile station connection 11 being examined is linked, in use in the telecommunications network.

304) A signal confirming the success of the updating is forwarded 304a - 304d to the mobile station connection being examined through the Gateway server 16, the short message centre SMS 15, and the mobile switching centre MSC 14.

It is also possible to update the calendar server 19 in a corresponding manner. In that case, the communication between the calendar server 19 and the mobile station connection 11 being examined can travel through the contactability server 18.

In the method, shown in the flow chart of Figure 4, for displaying the prevailing contactability profile data, the following stages are carried out:

401) The mobile station 10 being examined is connected to the mobile station connection 11 being examined and the mobile station 10 is switched on, when it connects to the telecommunications network over a signalling connection. An interface of the mobile station detects the connection over the signalling connection to the telecommunications network by detection means, which are set to detect the connection by a mobile station to the telecommunications network over a signalling connection.

402) In response to the connection of the mobile station 10 being examined to the telecommunications network over a signalling connection, the

telecommunications network is sent a request to provide the contactability profile 27. In the interface of the mobile station 10, the transmission means performs this as a query for sending the contactability profile that is active in the telecommunications network, and to which contactability profile the mobile station connection is connected.

403) The mobile station 10 being examined receives, from the telecommunications network, the specific contactability profile data concerning the contactability profile 27 being examined. In the interface of the mobile station 10, this is performed by the receiving means of the contactability profile that is active in the telecommunications network, to which the mobile station connection is connected, in order to receive the defining individuation message.

404) The display of the mobile station shows the contactability service control window, which can be, for example, a menu like the following:

Active contactability profile
Alarms
New messages
Next calendar entry
Pass

The individual elements visible in the menu can be, for example, as follows:

General profile
No alarms
2 new voice-mail messages
Thurs. 02.12.1999 12 - 4 p.m. Cab 3
Pass

The presentation takes place by the activation means for activating the opening means of the control window interpreting the mobile station as having connected to the telecommunications network over a signalling connection and interpreting the individuation message that states which of the contactability profile is active. In response to the above, the activation means activate the opening means of the control window. The opening means of the control window then open a contactability service control window, similar to that shown above, on the display of the mobile station, which control window displays at least one such contactability profile that is active in the telecommunications network, and to which the mobile station 11 being examined is connected.

In the example described, the detecting means are set to notify the transmitting means that the mobile station has been connected to the telecommunications network over a signalling connection, and the transmitting means are set, having received the notification, to send a query concerning the active contactability profile 27. The activation means are in turn set to activate the control window opening means in response to the connection of the mobile station to the telecommunications network over a signalling connection and in response to the reception of the individuating message defining the active contactability profile 27. It is also possible to set the activation means to operate in response to one or other of the aforesaid conditions. If the activation means operate in response to the mobile station connecting to the telecommunications network over a signalling connection, and if the network or server is congested, the control window can open slightly before the individuating message arrives. If, on the other hand, the activation means operate in response to the reception of the individuating message, the control window is opened only once it is possible to display the prevailing settings of the service. According to the embodiment, the detecting means and/or the receiving means are set to notify the activation means correspondingly.

From a menu similar to that shown above, the user of the mobile station can see their operating contactability profile and whether any alarms have arrived for them. The user can also see from the menu if messages have arrived for them. Calendar entries coming from the calendar server 19 are also brought to the menu of the mobile station.

In response to the reception of the selection of an individual element from the interface of the mobile station, and if the selected individual element is other than 'Pass', the WAP browser is activated by means of the mobile station. After this, the following operations are performed:

405) On the basis of the selection received from the interface of the mobile station being examined, contact is made with the server in the telecommunications network, which contains the currently valid data for the individual element selected from the menu. In the interface of the mobile station, this takes place by using means for individuating the element selected in the interface from the control window of the contactability service, and means for transmitting a signal stating the individuated element to the telecommunications network.

406) A query is sent to the telecommunications network concerning the data linked to the selected individual element, which is defined from the interface of the mobile station being examined to be the subject of the query, and/or the data, linked to the selected individual element, which is defined from the interface to be sent to the telecommunications network, is sent to the telecommunications network. After this, a second individual element can be selected, contact can be made with the server responsible for updating it, the server requested for subscriber-connection-specific data, and the data, which has been defined from the interface to be sent to this server, can be sent to it. It is also possible to proceed similarly in the case of all the menu elements and possible sub-menu elements, concerning which commands are received from the interface of the mobile station.

407) The WAP-connection is closed and the display of the mobile station changes to the normal basic display.

Figure 5 shows one possible method for forming a telecommunications connection from a connection of a public telephone network (PSTN) or a mobile network (PLMN) to a customer of a contactability service. It includes the following stages:

501) A call-connection request, such as number dialling, is forwarded from the direction of a calling subscriber connection 25 to the SSP centre 12.

502) Notification of the call-connection request received from the direction of the calling subscriber connection 25 is forwarded from the SSP centre 12 to the control SCP 13 (Service Control Point) of the intelligent network.

503) Call control is transferred to the SCP 13. According to the service logic in the SCP and the available contactability information, the routing of the call starts according to the active contactability profile 27 of the customer of the contactability service. In this example, the active profile of the contactability service's customer is the customer's business profile. The SCP 13 sends a query to the contactability server 18 for the data according to the contactability profile 27 being examined, which it needs for call routing.

504) The specific data according to the contactability profile 27 being examined is sent from the contactability server 18 to the SCP 13.

505) A call-connection request is sent from the SCP 13 through the SSP centre 12 (stage 505a) to the workplace switchboard PBX 22 of the customer of the contactability service (stage 505b), after which a call-connection request is sent from the switchboard to the extension 23 of the customer of the contactability service (stage 505c).

506) If the extension 23 of the customer of the contactability service is busy or does not respond within a certain time, the SCP 13 forms a call-connection request directed to the mobile station connection of the customer of the contactability service according to the contactability profile 27 being examined and sends 506a it to the public telephone network (PSTN). As a result of the above, a call-connection request concerning the mobile station connection of the customer of the contactability service is sent from the telephone network (PSTN) to the mobile network (PLMN), from which the call-connection request is forwarded 506b and 506c to the mobile station connection of the customer of the contactability service, through the switching centre MSC/VLR 14 of the mobile network.

507) If the mobile station connection of the customer of the contactability service is also busy or does not respond with a certain time, the SCP 13 forms a call-connection request directed to the home connection 26 of the customer of the contactability service and sends it to the public telephone network (PSTN). The call-connection request can be sent, for example, to the SSP centre 12 of the public telephone network, if the home connection 26 of the customer of the contactability service can be contacted through it.

508) As a result of the above, a call-connection request is forwarded from the public telephone network (PSTN), for example, from the SSP centre 12 belonging to it, to the home connection 26 of the customer of the contactability service.

509) If the home connection 26 of the customer of the contactability service is also busy or does not respond within a certain time, the SCP 13 forms a call-connection request directed to the message server 20 of the customer of the contactability service, according to the contactability profile 27 being examined, and sends (stage 509a) it to the public telephone network (PSTN). As a result of the above, the call-connection request is forwarded (stage 509b) from the public telephone network (PSTN) to the message server defined for the customer of the contactability service and a telephone connection is formed between the calling connection and the message server defined for the customer of the contactability service.

It is also possible that, in the case of the example, the available contactability profile has been defined in connection with the formation of a telephone connection to an IP terminal device. In that case, stage 510 of the method is performed:

510) A call-connection request, directed to the IP Gateway defined for the customer of the contactability service according to the contactability profile being examined, is formed and sent (stage 510a) from the SCP 13 to the public telephone network (PSTN). As a result of the above, the call-connection request is forwarded from the public telephone network (PSTN) to the IP Gateway defined for the customer of the contactability service (stage

510b), through which a telecommunications connection is formed (stage 510c) to the customer of the contactability service, between the IP terminal device 21 and the calling subscriber connection 25.

It the contactability profile 27, telecommunications network operational control data may be defined for cases in which no destination according to the subscriber identity connected to the contactability profile 27 responds to a call-connection request formed to this contactability profile. In such cases, the following stages can be carried out:

511) A message is sent from the SCP 13 to the contactability server 18, which is set to signify that it has not been able to form a telephone connection to any destination according to the subscriber identity defined in the contactability profile 27. The calling subscriber identity is also sent from the SCP 13 to the contactability server 18.

512) In response to the message sent in stage 510, a browser connection is opened between the contactability server 18 and the mobile station connection 11 being examined, if such is not already open, and the identity of the calling subscriber connection is sent (stages 511a - 511c) by means of the browser connection to the mobile station connection 11 being examined.

Embodiments of the invention, differing from those disclosed above, can also be contemplated.

The contactability service can be controlled, instead of by the mobile station or in parallel to it, by a telecommunications connection, such as a WAP or Web connection, used in a fixed telecommunications network.

A specific calendar entry recorded in the calendar server 19 can activate an alarm to the interface of the mobile station, if this is defined in the contactability profile 27. Such an entry can also be made by an external person, such as a secretary, from their own subscriber connection, if this has been provided with the necessary rights in the calendar service and/or in the contactability service. A function of this kind requires the construction of correctly defined control logic between the contactability server 18 and the calendar server 19, while the mobile station's interface must have means for

interpreting a signal stating the contents of the entry of the calendar service to be performed in the telecommunications network and received by the mobile station interface, and means for activating a specific symbol in the control window of the contactability service, in response to the interpreted signal.

A timetable entry defined for the calendar server 19 can activate a corresponding contactability profile, if so defined by the control logic between the contactability server 18 and the calendar server 19.

The message server 20 can be set to send a greeting or a message to the contactability server according to the control data defined in the contactability server, to the mobile station connection 11 being examined, or to the telecommunications terminal device attempting to make a telephone connection to a destination according to the contactability profile being examined.

The message server 20 can be set to transmit messages to destinations defined by the contactability server 18 while, on the other hand, the contactability server 18 can be used to prevent specific messages being sent to message destinations, if so required by the contactability profile definitions linked to the destinations.

The calendar server 19, the contactability server 18, and the message server 20 can be a distributed system, or systems that are entirely or partly integrated with each other.

It should be understood, that the operations of the SSP or SCP referred to above can be set to be performed in some other server. In that case, in an embodiment in which the call-control operations are entirely implemented in an IP network, there is no need for a discussion travelling through the gateway to the public telephone network.

The contactability service and message service can also be perfectly well implemented in a server located in an IP network. Such another server need not be only a server maintained by the tele-operator, but can also be, for example, the customer company's own server. By means of the invention, it is of course also possible for the services to be provided by a service operator other than the tele-operator. In that case, the tele-operator provides a telecommunications connection, for instance, between the service operator providing calendar services and the customer using a calendar service.

The invention can also be extensively applied in connection with mobile telephones. The application of the invention is not limited only to a specific mobile telephone technology, but can be used, not only in connection with GSM technology, but also with other mobile telephone technologies. Among the other technologies, the GPRS, EDGE, and UMTS technologies in particular can be mentioned. The application environment used can be a technology other than WAP, which has been dealt with in the examples of this application, for reasons of clarity.

Our invention is also very suitable for use in connection with the technology disclosed in the aforementioned application publication WO99/48314. When implementing many of the embodiments of our invention, is it quite possible to exploit the mobile stations, interfaces, extension layers, and configuration routines disclosed in the aforesaid publication, or similar.

Claims:

1. A method for managing a contactability profile by means of a mobile station, in which

- the mobile station (10) is connected (401) to a mobile station connection (11), and

- the mobile station (10) is connected (202) to a telecommunications network over a signalling connection,

characterized in that

- in response to the connection of the mobile station (10) by a signalling connection to the telecommunications network, data are sent from the telecommunications network in the direction of the mobile station (10), which individuate at least one contactability profile (27), which is active in the telecommunications network and to which the mobile station connection (11) being examined is connected.

2. A method according to Claim 1, **characterized** in that

- contactability profile data, which concern at least one contactability profile (27), which is active in the telecommunications network and to which the mobile station (11) being examined is connected, is retrieved (203 - 204) from the contactability server (18) of the telecommunications network, and

- the retrieved contactability profile data retrieved from the contactability server (18) are forwarded (205) in the direction of the mobile station (10) being examined.

3. A method according to Claim 1 or 2, **characterized** in that

- a contactability profile (27) updating request is received (301) in the telecommunications network from the direction of the mobile station (10), and

- the contactability profile (27) is updated (303) according to the updating request received in the telecommunications network.

4. A method according to one of Claims 1 - 3, **characterized** in that, in response to timetable entries made in a calendar service to be implemented in the

telecommunications network connected to the mobile station connection (11), the contactability profile (27) that is active in the telecommunications network is changed, or the contactability profile (27) that is active is added or removed, or a contactability profile (27) recorded in the telecommunications network is updated.

5. A method according to one of Claims 1 - 4, **characterized** in that a signal expressing an entry made in the calendar service to be implemented in the telecommunications network is sent to the mobile station (10), in response to a timetable entry defined in a specific manner in a calendar service to be implemented in a telecommunications network for a specific party.

6. A method according to one of Claims 1 - 5, **characterized** in that the message server (20) of the telecommunications network is set to send at least one message to the terminal device of the telecommunications network in response to a definition made in the contactability profile (27).

7. A method according to one of Claims 1 - 6, **characterized** in that the message server (20) of the telecommunications network is prevented from sending a message to the mobile station connection (11) or to the calling subscriber connection (25) in response to a definition made in the contactability profile (27).

8. A method according to Claim 7, **characterized** in that the message server (20) is commanded in the control of the contactability server (18) to send messages or prevent messages from being sent.

9. A method according to one of Claims 1 - 8, **characterized** in that a user identifier, entitling to the use of the mobile station connection (11), is received (402) from the interface of the mobile station (10).

10. An interface to be used with the aid of a mobile station arranged to operate a mobile station connection, which includes

- detection means for detecting the connection of the mobile station (10) to a telecommunications network over a signalling connection,

- transmission means for sending a query concerning such a contactability profile (27) that is active in the telecommunications network, to which contactability profile (27) the mobile station connection (11) is connected,

- receiving means of the contactability profile (27) active in the telecommunications network to which the mobile station connection is connected, for receiving a defining individuation message,

- opening means for opening a control window of the contactability service on the display of the mobile station (10), in which control window is displayed at least one contactability profile (27) active in the telecommunications network, and to which the mobile station connection (11) being examined is connected, and

- activation means for activating the opening means of the control window,

characterized in that

- the detection means are set to notify the transmission means of the connection of the mobile station to the telecommunications network over a signalling connection,

- the transmission means are set to send a query concerning the contactability profile (27) that is active, in response to the connection of the mobile station (10) to the telecommunications network over a signalling connection, and

- the activation means are set to activate the opening means of the control window in response to

- the connection of the mobile station to the telecommunications network over a signalling connection and/or

- to the reception of an individuation message defining the contactability profile (27) that is active.

11. An interface according to Claim 10, **characterized** in that it includes

- means for individuating a selected element in the control window of the contactability service, and

- means for sending a signal expressing the individuated element to the telecommunications network.

12. An interface according to Claim 10 or 11, **characterized** in that it includes means for displaying the state of an individuated calendar service, to be implemented in the telecommunications network for a specific person, as an element in the control window of the contactability service.

13. An interface according to one of Claims 10 - 12, **characterized** in that it includes means for displaying the state of a message service, to be implemented in the telecommunications network, as an element in the control window of the contactability service.

14. An interface according to one of Claims 10 - 13, **characterized** in that it includes

- means for interpreting a signal expressing the contents of an entry, received by the mobile station, and made in the calendar service to be implemented in the telecommunications network, and

- means for activating a specific symbol in the control window of the contactability service, in response to the interpreted signal.

15. An interface according to one of Claims 10 - 14, **characterized** in that it includes

- means for receiving an calendar entry, and

- means for sending a signal expressing the contents of a calendar entry to the telecommunications network.

16. An interface according to one of Claims 10 - 15, **characterized** in that the individuating message includes an individuating definition of the contactability profile that is active in the telecommunications network.

17. An interface according to one of Claims 10 - 16, **characterized** in that the individuating message includes a definition of the contents of the contactability profile that is active in the telecommunications network.

18. An interface according to one of Claims 10 - 17, **characterized** in that the detection means, the transmission means, the reception means, the opening means, and the activation means are arranged to be implemented in the mobile station (10).

19. An interface according to one of Claims 10 - 17, **characterized** in that

- the detection means and the transmission means are arranged to be implemented in the telecommunications network, and

- the reception means, the opening means, and the activation means are arranged to be implemented in the mobile station (10).

20. A mobile station, in which there is at least one display, **characterized** in that it includes an interface according to one of Claims 10 - 18.

21. A subscriber card to be placed in the mobile station, such as a smart card or SIM card, **characterized** in that an interface according to one of Claims 10 - 18 is recorded on it.

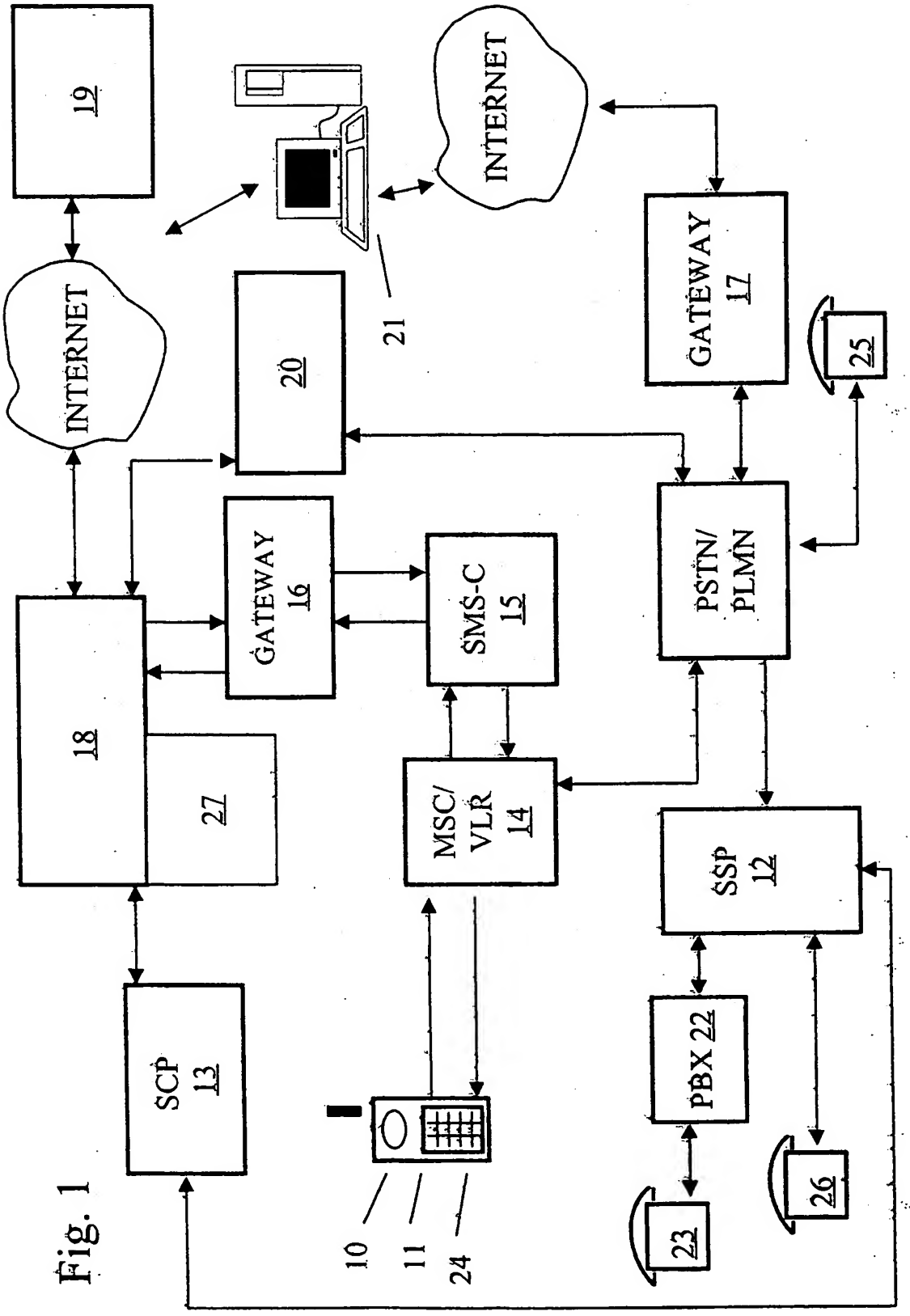

19
INTERNET
INTERNET
21
GATEWAY 17
25
20
GATEWAY 16
SMS-C 15
PSTN/ PLMN
18
27
MSC/ VLR 14
SSP 12
SCP 13
PBX 22
10
11
24
23
26

Fig. 1

Fig. 2

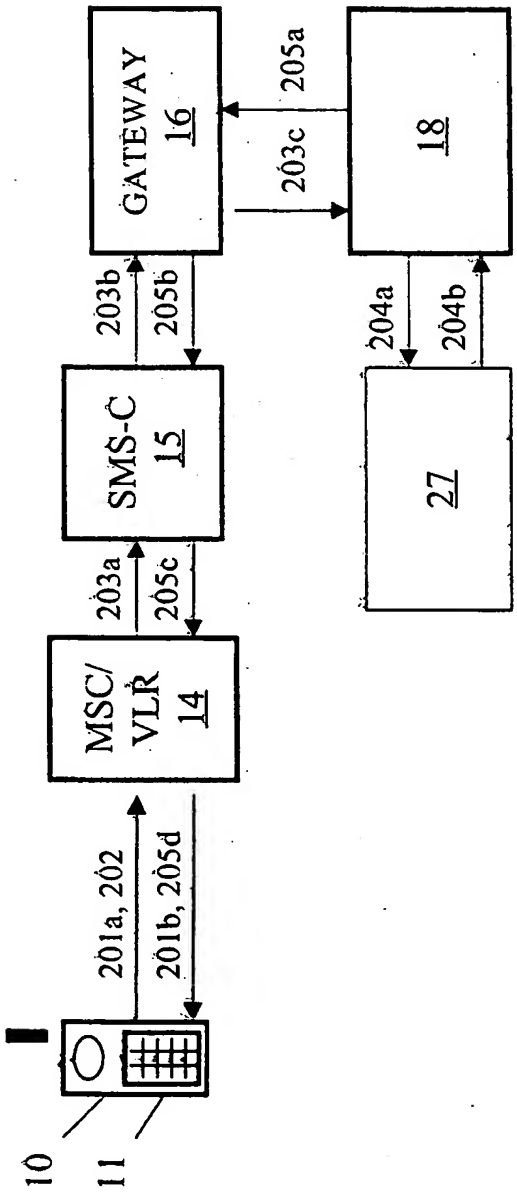
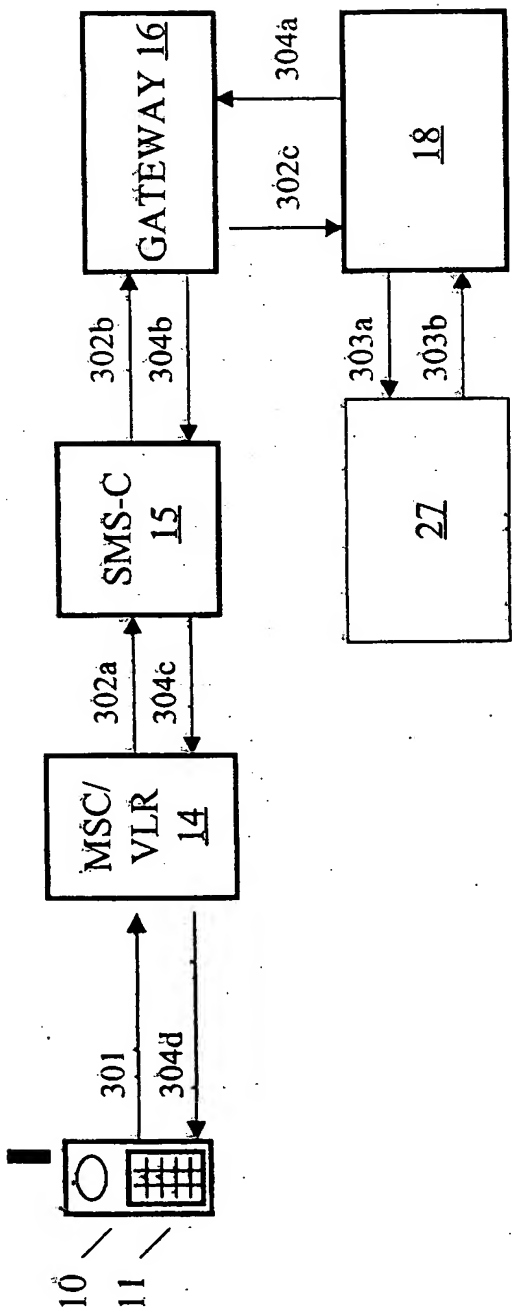

GATEWAY 16
18
205a
203c
203b
205b
204a
204b
SMS-C 15
27
203a
205c
MSC/ VLR 14
201a, 202
201b, 205d
10
11

Fig. 3


GATEWAY 16
18
27
SMS-C 15
MSC/ VLR 14
10
11
301
302a
302b
302c
303a
303b
304a
304b
304c
304d

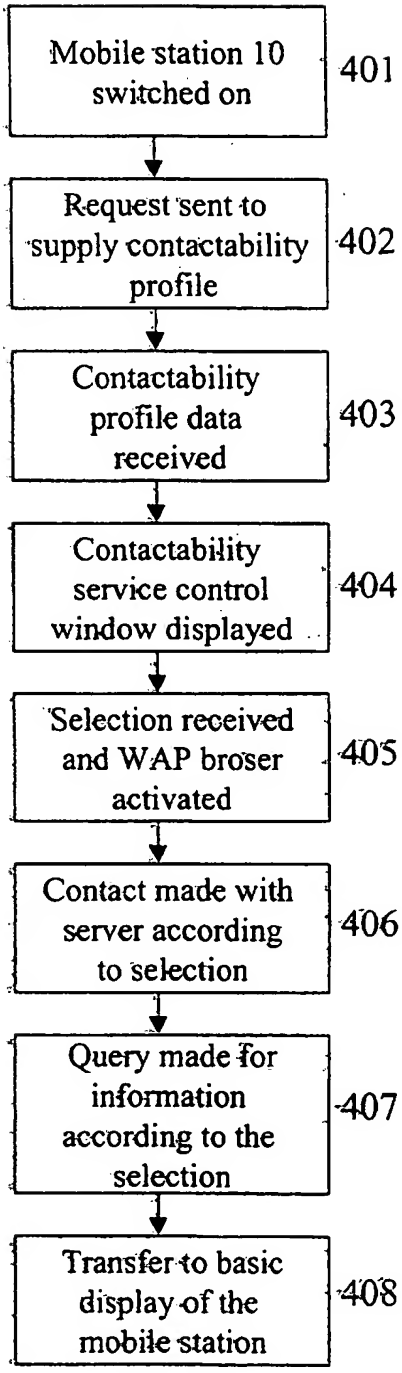
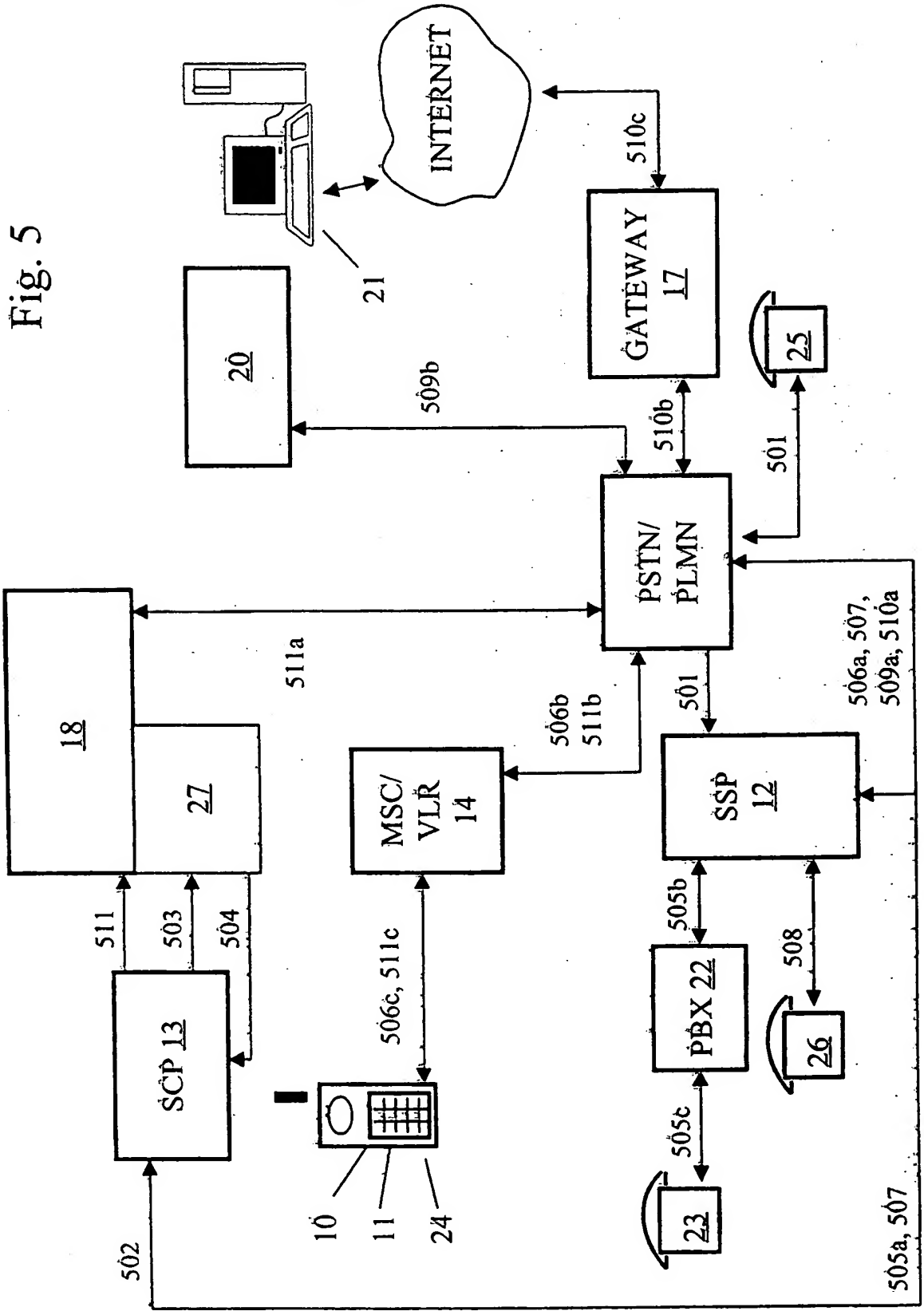

Mobile station 10 switched on
401
Request sent to supply contactability profile
402
Contactability profile data received
403
Contactability service control window displayed
404
Selection received and WAP broser activated
405
Contact made with server according to selection
406
Query made for information according to the selection
407
Transfer to basic display of the mobile station
408

Fig. 4

Fig. 5


INTERNET
510c
GATEWAY 17
21
20
509b
510b
501
25
PSTN/ PLMN
18
27
511a
506b 511b
501
506a, 507, 509a, 510a
MSC/ VLR 14
SSP 12
511
503
504
506c, 511c
505b
508
SCP 13
PBX 22
26
10
11
24
505c
23
502
505a, 507

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI 01/00055

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04Q 3/00, H04Q 7/32, H04M 3/46
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H04Q, H04M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5668862 A (CECIL B. BANNISTER ET AL), 16 Sept 1997 (16.09.97), column 2, line 6 - column 4, line 26	1-21
A	WO 9948314 A1 (NOKIA TELECOMMUNICATIONS OY), 23 Sept 1999 (23.09.99), page 1, line 27 - page 3, line 23; page 5, line 31 - page 8, line 34	10-21
A	US 5742905 A (DAVID MATTHEW PEPE ET AL), 21 April 1998 (21.04.98), column 31, line 22 - column 32, line 21; column 34, line 10 - column 36, line 51	10-21

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
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"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
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"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
8 June 2000	11 -06- 2001
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer IRMA BORNHEDE/EE Telephone No. +46 8 782 25 00

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INTERNATIONAL SEARCH REPORT

Information on patent family members

30/04/01

International application No.
PCT/FI 01/00055

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5668862 A	16/09/97	US 5548636 A	20/08/96
		CA 2161968 A	22/12/94
		DE 69402716 D,T	11/12/97
		EP 0711485 A,B	15/05/96
		SE 0711485 T3	
		JP 8506710 T	16/07/96
		WO 9429992 A	22/12/94
WO 9948314 A1	23/09/99	AU 2838399 A	11/10/99
		CN 1258424 T	28/06/00
		DE 29922753 U	24/02/00
		EP 0993749 A	19/04/00
		FI 4377 U	10/04/00
		FI 106515 B	00/00/00
		FI 980588 A,V	18/09/99
US 5742905 A	21/04/98	CA 2199802 A	28/03/96
		EP 0782805 A	09/07/97
		JP 9511884 T	25/11/97
		US 5742668 A	21/04/98
		WO 9609714 A	28/03/96